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LAT 41.69381 LON 120.30172

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Forest Supervisor, Modoc N.F. September 18, 1967

Paul E. Neff, Chief, Division of Timber Management By

Detection (Modoc - Disease)

On August 1, Mitch Knight and Reed Miller accompanied Ken Smith to the Halls Meadow country to examine the Joseph Creek thinning area. There, they were met by Jim Russum who showed them several segments of the thinned area. One stump infected with Fomes annosus was located.

After examining the thinning plots (by poisoning) at Fender Flats, a sample of diseased needles was collected from a felled ponderosa pine (cut during the winter). The fungus on the needles was identified by Dr. Lee Bonar of the University of California at Berkeley as Trichosperma griseo-candidum. It is a saprophyte. The only specimens of this fungus found previously have been in South America and in Java. Dr. Bonar says, "This is a new and interesting fungus for me....I do not find any record for North America."

The thinning plots in the Sugar Hill Plantation were examined. The trees are healthy and appear to have had their vigor increased as a result of the thinning operation.

On August 2, Knight and Miller accompanied Bill Fox and Ron Bassett to the upper end of Jess Valley. They found a Jeffrey pine stump surrounded by four dead sapling to pole-sized trees of Jeffrey pine. These were killed by F. annosus. Another center was found beside the Coyote Creek Road in section 32 and 3 more centers within a mile of the first. The root disease was introduced in each case on freshly cut stumps either during logging or road construction. Another center of F. annosus was found on ponderosa pine in the campground at Blue Lake.

The serious disease problem at the Blue Lake Campground is caused by the black staining root disease. This fungus, Verticicladiella wageneriii, is a pathogen that has been found on Jeffrey, ponderosa and pinyon pine as well as on Douglas-fir in California. Little is known of its life history and how it spreads. We do know that it spreads by root contact and where it has been present for a number of years, the host tree over a fairly large area, has been practically eliminated from the stand. HBT

The black staining root disease has been found on pinyon pine on both the San Bernardino and Inyo National Forests. It has been found at several locations on ponderosa pine on the Eldorado National Forest as well as at one location on Douglas-fir. It occurs over large areas in the Blacks Mountain country on the Lassen National Forest. Dr. Richard S. Smith of

Pacific Southwest Forest and Range Experiment Station found the fungus at the Blue Lake area earlier this summer and a second center was located on August 2. In addition, two or three other clumps of dying trees were observed at Blue Lake but a lack of time prevented an examination.

After a tree becomes infected, a few months to several years may be required by the fungus to kill it. The length of time between infection and mortality depends upon the position of initial root infection and the size of the tree.

Affected trees slow down in growth and generally make no growth for the year in which they die. A particular feature of the stain pattern in the sapwood is that it is not wedge-shaped as in most sap stains but tends to follow the annual rings, forming dark blotches, streaks and crescents. The color is variable, depending on the moisture content of the wood, on whether the stained wood is resin-infiltrated, and on whether the cambium is still alive. The color may range from an intense black through dull or grayish black to brown or purplish brown. Frequently, the stain extends above the ground (from a few inches to few feet) in the sapwood of the bole.

No attempts to control the disease have yet been made and nothing is known of the means of transport of the fungus to initiate new infection centers. However, control should be much simpler than for most root diseases as the fungus grows well only in the low temperature range. Unlike Fomes annosus and Armillaria mellea, Verticicladiella wagenerii is not active as a parasite; so, when the tree and all its roots are completely dead the fungus dies.

Yellow witches'-broom, a rust caused by the fungus Melampsorella caryophyllacearum, was observed on white fir in the Blue Lake area.

The western white pine and whitebark pine in the Log Lake area were examined for white pine blister rust. The rust was found on Ribes petiolare, by the Lake, in 1945 but apparently did not return to the pine. No rust was found on either ribes or pine.

A needle cast Bifusella lanceris on whitebark pine was found for the first time on this species. This fungus usually attacks only the older needles of the white pine group and causes little damage. It is of no economical importance in the West and of interest only as it was found on whitebark pine.

Thursday morning, Miller and Knight accompanied Ken Smith to the Hackamore area where several centers of F. annosus were found. These centers, about 12 in all, were scattered through three townships. All had been introduced on freshly cut ponderosa pine stumps. Several young junipers were being killed at some infection centers. The one center of significance was at Hackamore Seed Production Area.

3-Forest Supervisor, Modoc N.F.-9/18/67

No serious disease situation (when considering the Forest as a whole) exists on the Modoc National Forest. The root diseases especially Fomes annosus can develop into a real problem. F. annosus is the big threat, if allowed to continue its unchecked spread into freshly cut stumps. The Verticicladiella wagenerii centers at Blue Lake is a serious problem for the Campground but this is the only place it has been found on the Forest.

xcc: Modoc
cc: M. Knight

DFMiller:pi